

SHIKHOBALOVA, N.P.; PARUZHINSKAYA, L.S.

Variation in the radiosensitivity of eggs separated from
individual females of *Ascaris* and *Ascaridia*. Trudy Gel'm.lab.
11:337-339 '61. (MIRA 15:12)

(Ascarids and Ascariasis)
(Radiation—Physiological effect)
(Worms—Eggs)

SHIKHOBALOVA, N.P., PARUZHINSKAYA, L.S.

Studying the effect of ionizing radiation (X rays) on the eggs of
Trichocephalus muris Schrank, 1788. Trudy Gel'm. lab. 10:248-253
'60. (MIRA 13:7)
(X rays—Physiological effect) (Nematoda)

LEYSKELT, L. [Leyskelt, L.], 1930. Veterinärnyj FARVZ, N.

Veterinärnyj kapitul' of naivens in the Estonian S.S.R.
Veterinärnyj naivens 1965.

(M.RA 18. 1)

2. Tüdruksid ja nende epidemioloogilise mikrobiologii
alg (tung) (1). Leyskelt, L. Zavod syl'shchaya estantsiiyev
po ber'be a vobozhdenii zdravstvuyushchym Estonianskym SSR (for Parus).

PARVE, T.M.

Competition power in practical work. Veterinariia 41 no.3:11-14
Mr '65. (MIRA 12:4,

1. Glavnyy veterinarnyy vrach Rukvereskogo proizvodstvennogo
upravleniya Estonskoy SSR.

PARVE, T.P., veter. vrach. (Rakovetskiy rayon, Batorskaya SSR)

Achievements in the control of cattle and poultry tuberculosis. Veterinariia 40 no.2:12-15 '63. (MKKA 1).

PARVE, Valdar, dots., kand. vet. nauk; KRUUS, A., red.; LUMET, E.,
tekhn. red.

[Fur farming] Karusloomakasvatus. Tallinn, Eesti riiklik
kirjastus, 1961. 497 p. (MIRA 15:5)
(Estonia--Fur farming)

PARVE-KOPTLOVA, T.E.

Malaria on the mc or ship "Palestiy". Med,paraz. i paraz,bol.
33 no.3:315-317 My-Je '64. (MIRA 18:1)

1. Basseynovaya sanitarno-epidemiologicheskaya stantsiya Chernomorsk
Azovskogo vodiziravotdela.

PARVE-KOPTELOVA, T.E.

Organization of antimalarial preventive measures on ships going
to foreign countries. Med. paraz. i paraz. bol. 32 no.3:262-267
My-Je'63 (MIRA 17:3)

1. Parazitologicheskiy otdel Basseynovoy sanitarno-epidemiolo-
gicheskoy stantsii Chernomorsko-Azovskogo vodnogo otdela zdravo-
okhraneniya (glavnyy vrach N.V. Pavlov).

METSA, Herbert; PARVEL, Kalju; JUSKE, M., red.; KOMU, H., tekhn. red.

[Main problems of the interrelation between production and consumption during the transition to communism] Tootmise ja tarbimise seostamise pohikusimusi üleminekul kommunismile. Tallinn, Eesti Riiklik Kirjastus, 1961. 41 p. (Eesti NSV Poliitiliste ja Teadusalaste Teadmiste Levitamise Uhing, no.312) (MIRA 15:7)

(Economics)

L 12384-65 EWP(e)/EPA(s)-2/WT(m)/cPP(n)-2/EPA(w)-2/EPA(bc)-2/EWP(b) Pab-13
ACCESSION NR: AP4048556 Pt-4/Pt-10/Pt-4 S/0286/64/000/019/0032/0032
WW/WH

AUTHOR: Kitaygorodskiy, I. I.; Bondarev, K. T.; Barsukov, M. I.; 8
Lazorenko, V. I.; Minin, V. T.; Mitkevich, G. I.; Parfenkov, G. S.; Boyko, G. V.

TITLE: Method for manufacturing flat foam pyroceram products.
Class 32, No. 165528

SOURCE: Byulleten' izobreteniij i tovarnykh znakov, no. 19, 1964, 32

TOPIC TAGS: An Author Certificate has been issued for a method of manufacturing flat foam pyroceram (sitall) products based on glass made from slag. The glass is heat-treated in two stages in order to obtain a porous surface, while maintaining a nonporous subsurface. While the subsurface is being cooled, the surface is heated to 100—150°C above the crystallization point to a viscosity not to exceed 400—500 poise, and maintained under these conditions for 10—30 minutes.

ASSOCIATION: none

Card 1/1

PARVENT'EV, L.M.

a50/1889 (The action of ethylorthoformate on diacetyl- and acetyl-acetone) Deistvie
ortomurav'inogo efira na diatsetil i atsetil-atseton.
ZHURNAL OБSHCHEI KHMII, 11(9): 707-712, 1941.

SYCHEV, P.M.; PARVIAYNEN, A.E.

Dependence on the propagation velocity of elastic waves on the
density of rocks in Sakhalin. Geol. i geofiz. no.6:103-106 '63.
(MIRA 19:1)

1. Sakhalinskoye otdeleniye Vsesoyuznogo nauchno-
issledovatel'skogo geologorazvedochnogo instituta, Okha-na-
Sakhaline.

S/264/R2/000/010/003/006
006/I206

AUTHORS: Parvitskaya, A.A., Zhukov, V.I.
TITLE: On use of casein-cement glue in wooden aircraft structures
PERIODICAL: Referativnyy zhurnal. Vozdushnyy transport. Svodnyy tom. no. 10, 1962, 9, abstract 10A65. (Tr. Kazansk. khim.-tehnol. in-ta, 1961, 27, 224-238)

TEXT: Casein-cement glue, having practically equal strength coefficients with casein glue, differs from it by higher qualities with respect to humidity endurance, and besides it is cheaper. An experimental investigation of casein-cement glue has been carried out from the point of view of the possibility of its application in thin-walled aircraft structures instead of casein glue. Comparative tests were conducted on strength of glue joints with casein and casein-cement glue in static and dynamic splitting off. Strength characteristics of glue joints with each glue were obtained for plywood and pine wood. The investigations showed that casein-

Card 1/2

S/264/62/000/010/003/006
106/1206

On use of casein-cement...

cement glue is fully adequate for joining elements of wooden aircraft structures and has, with regard to operation, considerable advantages as compared with pure casein glue, having endurance to humidity and decay.

[Abstracter's note: Complete translation.]

Card 2/2

PARVITSKAYA, A.A.

Designing wooden beams subjected to simultaneous action of transverse bending and axial forces. Trudy KAI 23:99-131 '49. (MLRA 10:6)
(Girders)

S/081/62/000/004/07¹/087
B138/B110

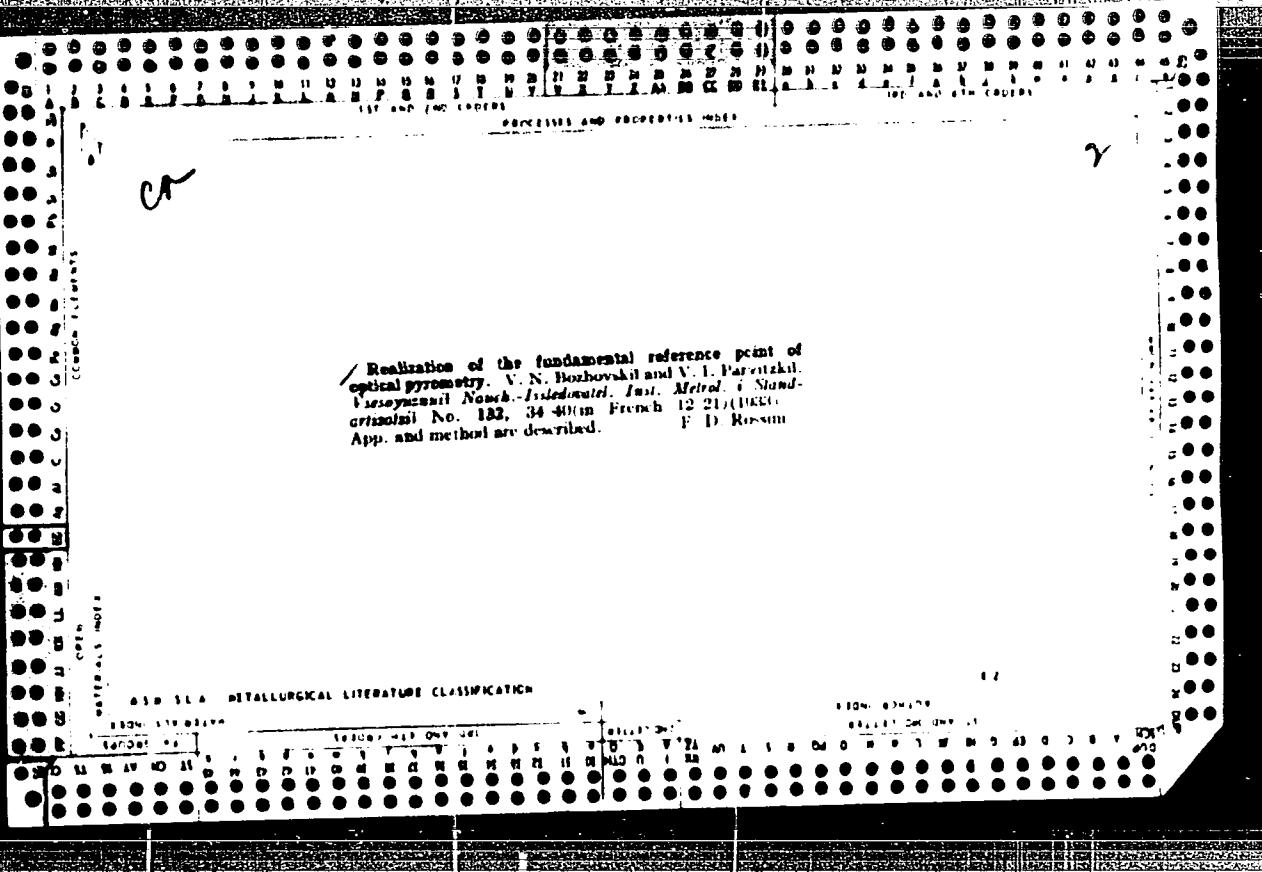
AUTHOR: Parvitskaya, A. A.

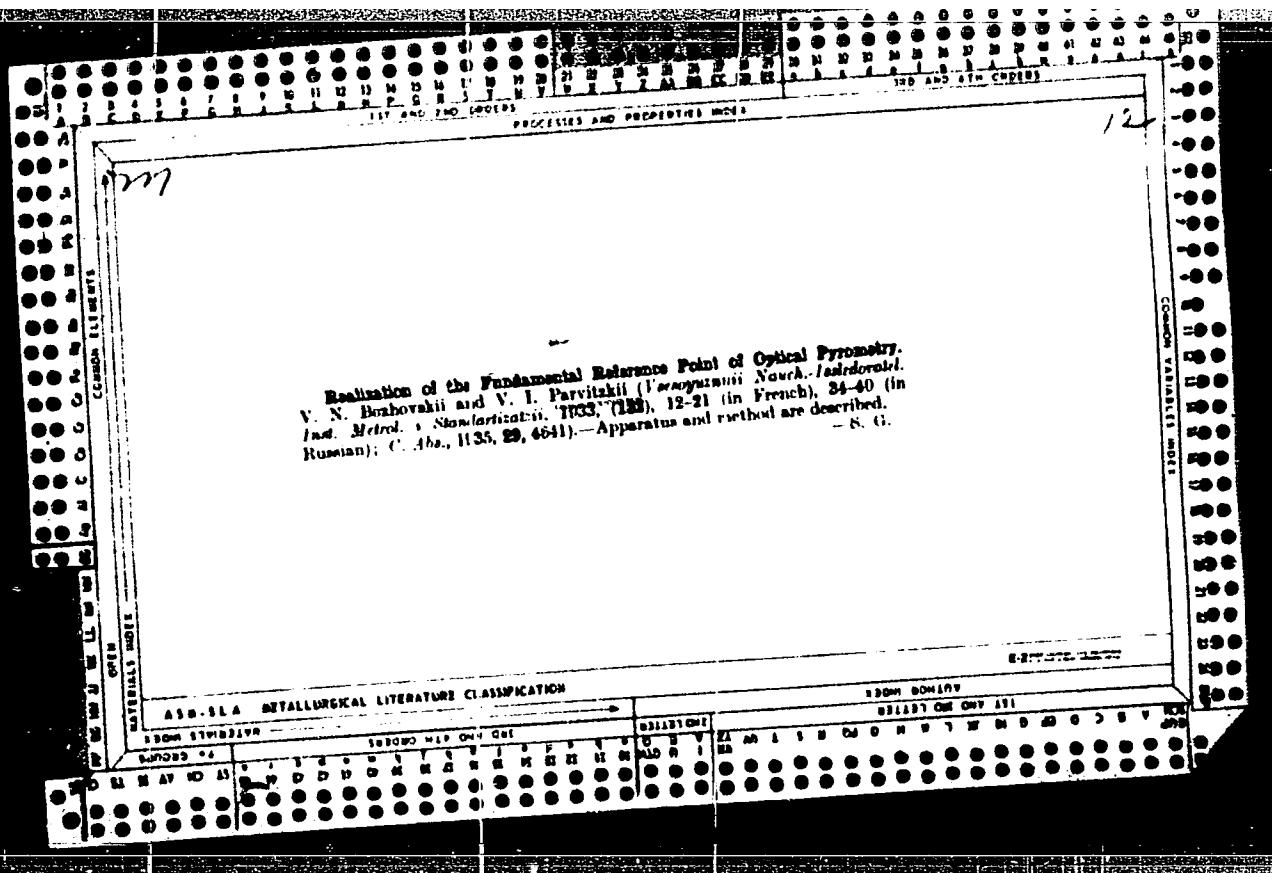
TITLE: Plastic section bending calculations

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 4, 1962, 556, abstract 4P8 (Tr. Kazansk. khim.-tekhnol. in-ta, no. 29, 1960, 172-174)

TEXT: For bending calculations for plastic sections simplified schemes have been compiled for the distribution of stresses along the section. These stresses correspond to the moment of rupture in bending and from this formulae are derived which relate the tensile strength δ of the material in tension, compression and bending σ_{dest} , σ_{compr} and σ_{bend} . Using these formulae it is shown for a number of plastics which scheme of stress distribution in the height of a section in bending may satisfy published values for tensile strength in tension, compression and bending all together, and the problem of the compatibility of these values is postulated. [Abstracter's note: Complete translation.]

Card 1/1





PARVO, A., red.; ALEKSANDROV, V., red.; EINBERG, K., tekhn. red.

[Unified norms and evaluations for building, installation, and structural repair work for 1960; evaluations recalculated to fit the new price scale] Ehitus-, montaaazja remont-ehitustoodete uhtsed normid ja hindad 1960. a.; hindad on ümber arvestatud vastavalt uuele hindade mastaabile. Tallinn, Eesti NSV Ministrite naukogu riiklik ehituse ja arhitektuuri komitee.
Vol.2.[Earthwork] Nullataod. Part 3. [Drilling and blasting works] Puurimis-lohkamistood. 1961. 90 p. (MIRA 15:5)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po delam stroitel'stva.
(Estonia—Standards, Engineering) (Earthwork)

PARVOV, V.F.

Growing crystals from a solution using a special centrifugal
pump as a mixer. Kristallografiia 10 no.2:263 Mr-Ap '65.
(MTRA 18:7)

1. Institut kristallografi AN SSSR.

PARVOV, V.F.; SHUBNIKOV, A.V.

Growth velocity faces in $K_2Cr_2O_7$. Kristallografija 9
no. 3:435-436 My-Je '64. (MFA 175)

1. Institut kristallografi AN SSSR.

GOVORIKOV, V.G.; PARVOV, V.P.

Time interval indicator for cinematography. Trudy Inst.krist.
no.11:243-246 '55. (MIRA 9:6)
(Cinematography)

SHUBNIKOV, A.V.; PARVOV, V.F.

Generation of crystallization centers in a drop of ammonium chloride solution under the action of an electric field.
Kristallo, rafija 6 no.3:443-450 My-Je '61. (MIRA 14:8)

1. Institut kristallografi AN SSSR.
(Ammonium chloride) (Electric fields)
(Crystallization)

ACCESSION NR: AP4043201

S/0070/64/009/004/0584/0585

AUTHOR: Parvov, V. F.

TITLE: Apparatus for growing crystals from aqueous solutions by solvent evaporation

SOURCE: Kristallografiya, v. 9, no. 4, 1964, 584-585

TOPIC TAGS: crystal growth, evaporation, solvent extraction, aqueous solution

ABSTRACT: A glass crystallizer 2 (see Enc. 01) is immersed in a water thermostat 1 containing a heater, stirrer, and thermometers. The upper part of the crystallizer is a glass cylinder with an organic glass cover 5 on which a motor 6 is mounted. The cylinder is surrounded by the heater 7 which can be independently adjusted. The parts of the crystallizer are connected by means of an organic glass ring 3 with an inner groove which collects the condensate. When the

Cord 1/4

ACCESSION NR: AP4043201

temperature of the solution differs sufficiently from that of the surrounding air the water condenses on the inner surface of the cylinder below the heater, is collected in the groove and runs through the tube 8 and a valve into the measuring glass 9. The rate of evaporation can be controlled by opening and closing the valve and changing the position of the heater on the cylinder. The higher the heater the greater the rate of evaporation. The maximum rate attained in our setup (at an ambient temperature of 23°C and a solution temperature of 40°C, without using the heater on the cylinder and with open valve) is 100 cm³/24 hours. A 0.55-kg aluminum potassium alum crystal was grown on the setup after 52 days. Orig. art. has: 2 figures.

ASSOCIATION: Institut kristallografi AN SSSR (Institute of Crystallography, AN SSSR)

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2/4

ACCESSION NR: AP4043201

ENCL: 01

SUBMITTED: 22Jan64

OTHER: 000

SUB CODE: SS

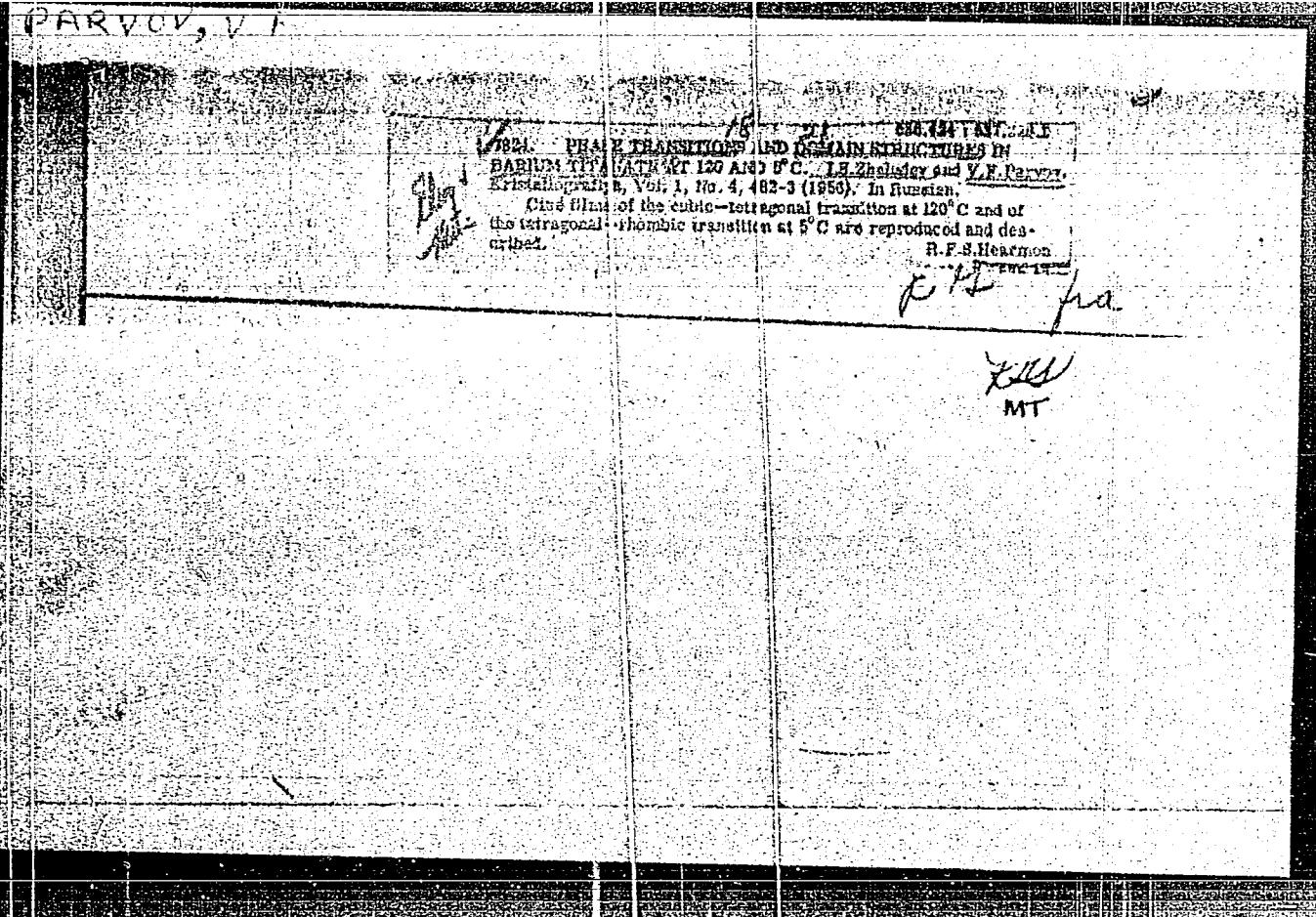
NR REF Sov: 000

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PARVOV, V.F.

Apparatus for growing crystals from aqueous solutions by evaporation
of the solvent. Kristallografiia 9 no.4:584-585 Jl-Ag '64.
(MIRA 17:11)

1. Institut kristallografii AN SSSR.

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PAKUSS, V. S.

KONSTANTINOV, A. V., PAVLOV, V. D.

"The Formation of Crystals"

A report presented at Symposium of the International Union of Crystallography,
Leningrad, 21 - 27 May 1959.

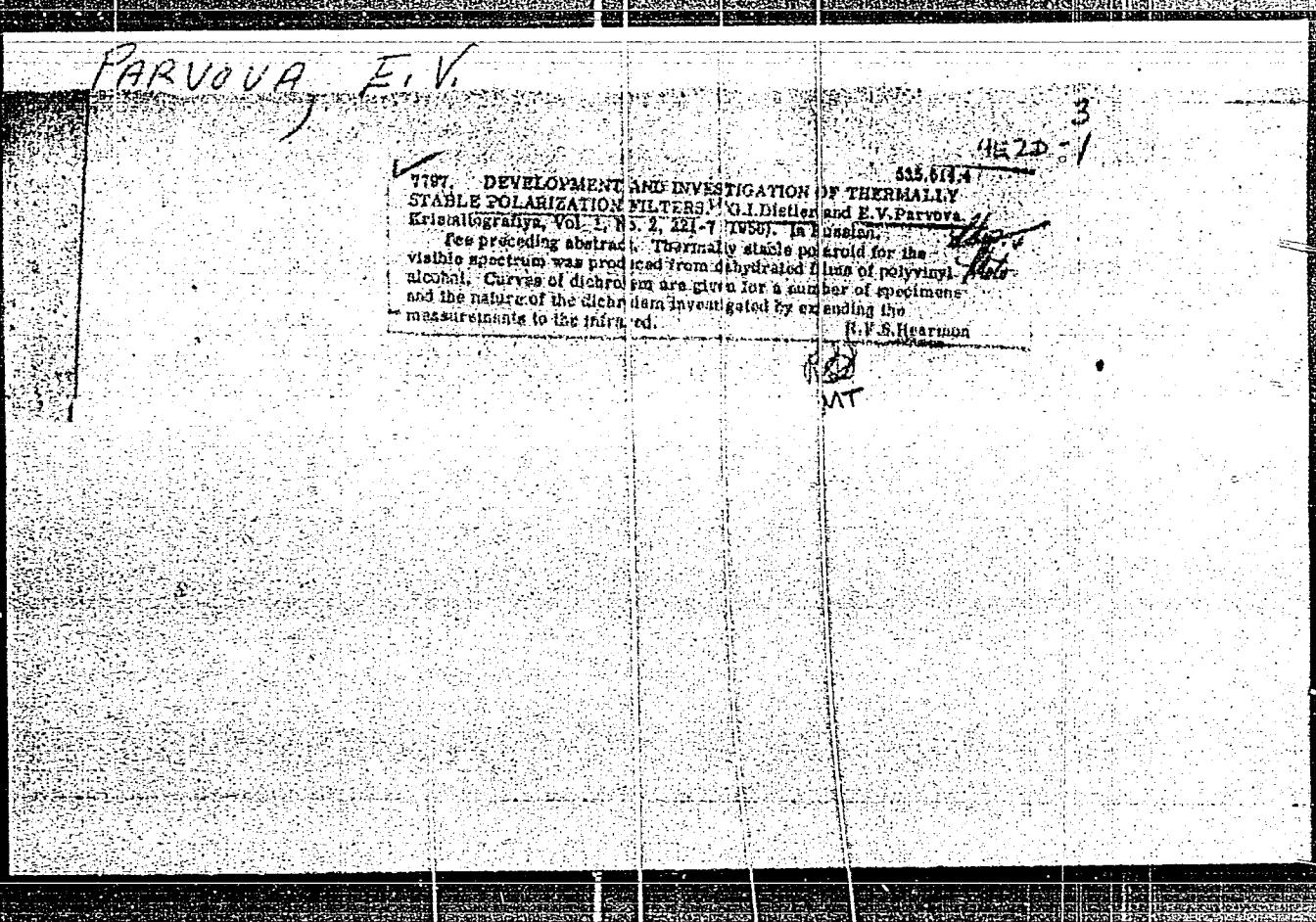
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CIA-RDP86-00513R001239310020-0"

ZHELUDEV, I.S.; PARVOV, V.P.

Phase transitions and domain structures in barium titanate at temperatures of 120°C and 5°C. Kristallografiia 1 no.4:482-483 '56. (MLRA 10:1)

1. Institut kristallografiii Akademii nauk SSSR.
(Barium titanates) (Chrystallography)



ROZHANSKIY, V.N.; PARVOVA, Ye.V.; STEPANOVA, V.M.; PREDVODITELEV, A.A.

Kinetics of selective etching and polishing of NaCl crystals.
Kristallografiia 6 no.5:704-713 S-0 '61. (MKA 14:1.)

1. Institut kristallografiil AN SSSR i Moskovskiy gosudarstvennyy
universitet imeni Lomonosova.
(Salt) (Crystallography)

ROZHANSKIY, V.N.; STEPANOVA, V.M.; PARVOVA, Ye.V.; PREDVODITELEV, A.A.

Nature of dislocation jumps in crystals. Fiz. tver. tela 5 no.2:
634-639 F '63. (MIKA 16:5)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova
i Institut kristallografii AN SSSR, Moskva.
(Dislocations in crystals)

S/181/63/005/002/040/051
B102/B186

AUTHORS: Rozhanskiy, V. N., Stepanova, V. M., Parvova, Ye. V., and
Predvoditelev, A. A.

TITLE: The causes of the jump-like motion of dislocations in crystals

PERIODICAL: Fizika tverdogo tela, v. 5, no. 2, 1963, 634 - 639

TEXT: The formation of etching tracks on the (100) face was investigated on two types of NaCl crystals of almost equal composition containing the following impurities Ca 0.05%, Mg 0.001%, Fe 0.03%, Ag 0.1%, Al 0.01%, Sn 0.005%, Si 0.001%. According to the compressibility of the crystals the rigid type was distinguished from the soft type. The dislocation jumps of the rigid crystals are about twice as large as those of the soft ones (10 and 4.5 μ). V, the velocity of the dislocations was measured in dependence on the stress σ (kg/cm²). In all cases $\log V$ increased linearly with σ , and decreased linearly with T^{-1} . The straight lines for rigid and soft crystals are in different positions but parallel. The difference of the rigid and soft types consists in a different impurity distribution. The mean dislocation velocity obtained from 20-30 measurements can be described

Card 1/2

DISTLER, G.I.; PARVOVA, Ye.V.

Development and study of heat resistant polarizers. Kristallografiia
1 no.2:221-227 '56. (MLRA 9:11)

1. Institut kristallografiia Akademii nauk SSSR.
(Polarograph)

PARVSEIWICZ, W.

Fuel Abst.

Vol. 15 No. 4

Apr. 1954

Natural Solid Fuels:

Winning

✓ 2714. INFLUENCE OF STOWING ON ROCK PRESSURE AND ROCK BURSTS IN MINE WORKINGS. Parvseiwicz, W. (Przegl. gorn. (Min. Rev.), Oct. 1953, vol. 9, 350-355). The influence of different types of roof rock on stowing material of different densities is discussed. The density of the stowing material affects pressures at the face, and if these attain certain values, rock bursts occur. (L).

(1)

PARVU, A.

The plane problem of elasticity for a circular crown ring in the case of two fundamental problems of limit.

I. 415 (Academia Republicii Populare Române. Institutul de Mecanica Aplicata. STUDII SI CERCETARI DE MECANICA APPLICATA. Vol. 7, no. 2, Apr./June 1956, Bucuresti, Romania)

Monthly Index of East European Acquisitions (FEAI) LC. Vol. 7, no. 2,
February 1958

PARVU, A.

About the deformations of gravity dams subjected to subpressure. p. 15.
(ANALELE. SERIA STIINTELOR NATURII. Romania. Vol. 5, no. 10, 1956)

SO: Monthly List of East European Accessions (EAA) LC, Vol. 6, no. 7, July 1957. Uncl.

D.R.A.V.L. Jr.

A rapid gravimetric method to separate aluminum from zinc, Raluca Tîrcă and I. Pârvu (V. Babes Univ., Cluj, Romania). A sum. rep. *Rom. Acad. România, Filiala, Cluj, Studii cercetării fizice*, J. No. 3/4, 30-40 (1982). Al is ppt'd to $\text{Al}(\text{DzO})_2\text{OH}$ with BaO_2 in the presence of urea (1) by boiling at pH of 3.5 to 5, the pH which will establish itself automatically if Zn is boiled in acid soln. Under these conditions, Zn will not ppt. The ppt. is cryst. and can be easily filtered on a Gooch crucible, as it does not adsorb Zn. A single pptn. will lead to a complete sepn. and refn. The results are good. Werner Jacobson

*Gen. 2**7*

C 2
1951

Analytical Chem. P.

The analysis of light alloys I. A new gravimetric method for the rapid determination of aluminum. Radu Riman and L. Popov (Univ. Cluj, Romania). *Acta Rep. Populară Române, Psi. Stinț. A*, 1, 1007-11 (1940). A neutral soln of an Al salt contg. not more than 0.06 g. Al₂O₃ in 20-25 ml. H₂O is heated to 60-70° and 4.5 ml of a benzoic acid soln (3.5 g. in 40 ml. EtOH) is added. The mixt. is boiled, stirred, and 5 ml of a fresh 3% soln of urea in H₂O is added dropwise. After pptn., the soln. is boiled for another 5-10 min with continuous stirring. The soln. is then filtered through a filter crucible and washed 10 times with a small quantity of a hot wash soln. prep'd by boiling 5 ml. urea in 500 ml. H₂O for 2 min. and then mixing with 6 ml. of the benzoic acid soln. as was used for the pptn.; then washed 4-5 times with 2% EtOH in H₂O. The mixt. is dried at 100-105° for 1.5 hrs. and weighed. It is possible to transform the ppt. into Al(OH)₃ which is less hygroscopic than the one obtained by classical methods. By the same method other trivalent elements can be detd. and also easily sepd. from bivalent and univalent cations.
Gerhard Aufliger

PÂRVU, Monica Pavel

Pârvu, Monica Pavel. Sur les espaces quasi normés.
An. Univ. "C. I. Parhon" Bucureşti. Ser. řti. Nat. 6
(1957), no. 14, 15-23. (Romanian. French and Russian
summaries)

The author considers vector spaces E with a topology defined by a "quasi-norm" $x \rightarrow \|x\| = p(x)$ which is sub-additive and satisfies the modified homogeneity condition

$\|\lambda x\| = |\lambda|^r \|x\|$ for some r satisfying $0 < r \leq 1$. These are spoken of as (CN)-spaces. A few concrete examples are given. Product and quotient spaces are considered, as well as the concept of (CN)-algebra. The principal results are extensions to (CN)-spaces and algebras of well-known facts about normed spaces and algebras, the proofs being simple, and direct adaptations of those current in the normed cases.

R. E. Edwards (Woking)

~~PARVULESCO~~

Parvulesco, Cost. Sur les pulsations des systèmes stellaires. Acad. Roum. Bull. Sect. Sci. 25, 8-14 (1943).

The author distinguishes between two phases in the evolution of a galaxy. In the first phase a nonrotating galaxy left by itself is shown to have a spherical shape. The most massive stars will have the greatest concentration about the center. The author attempts to demonstrate that close encounters and actual collisions will tend to increase the degree of central condensation. The second phase begins when an encounter between two galaxies takes place. The tidal forces between the two galaxies result in an elongation of the perturbed galaxy in the direction of the perturbing galaxy. At diametrically opposite points, the tidal forces from the passing galaxy, combined with the effect of the centrifugal force of rotation, lead to instability, with as a result material flowing outward along spiral arms. Certain gyroscopic effects tend to speed up the dissolution of the system as a spiral.

The paper is in the nature of a brief and general exploratory treatment. Without a more extensive analysis, one cannot accept the conclusions as demonstrated. No attempts are made to relate the new approach to those suggested by Lindblad and other authors and there is no indication as to how the author expects to be able to justify his conclusions on observational grounds.

B. J. Bok.

Author: Mathematical Physics

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PARWI, H.

New standards of traffic load on rail**r**oad bridges. p. 271. PRZEGLAD STROJOWY.
Warsawa. Vol. 7, no. 7, July, 1955

Source: East European Accessions List, (EEAL), Ic, Vol. 5, No. 3, March 1956

PARYBOK, V.P.

SESSION D-15-6 : The Effect of Oxygen at the Cellular and Mutational Level II.

(a)
Persorption Hypothesis of the Oxygen Effect

V. P. Paribok, G. P. Krupova and S. I. Pravdin

Monoatomic narcotics (mercaptans and low molecular narcotics (S_2 , N_2O , CH_4 , cyclopropane), under pressure and added to air, diminish the radiosensitivity of animal, plant and bacterial cells to the anoxic level. The mechanism of this protection, observed by Ellett, Howard and Horwitz (1955, 1961), is probably the competition between narcotic and oxygen in the lipid structures of the nucleus. The other low molecular narcotics also have an anti-oxygen protective activity; they reduce the phagocytosis of the growth and the number of abnormal anaerobic telephores in the roots of *Lemna flos*. But the maximal protective effect of alcohols, hydrocarbons and fluorochloro-hydrocarbons is less than the effect of inert gases. The protective activity of alcohol begins to less from methyl to butyl alcohol, though the capacity of alcohol to penetrate into the cell and to replace other substances (dyes) in the cell varies inversely.

Comparing the protective effectiveness of low molecular narcotics and their molecular volume, we found a distinct negative correlation. The substances with a molecular volume of about 100 Å have no protective effect of this type.

We suppose that competition of narcotics and O_2 takes place, not only on the surface of radiosensitive polymers, but also in those pores whose dimensions slightly exceed those of O_2 molecule. In this case, adsorption competition with oxygen will involve only molecules of equal or lesser size. Results are discussed in order to determine the nature, configuration and localization of radiosensitive structures.

Institute of Cytology, Academy of Sciences of the USSR, Leningrad

report presented at the 2nd Intl. Congress of Radiation Research,
Harrogate/Yorkshire, Gt. Brit. 5-11 Aug 1962

PARYGIN, B.D.

Conference on the problems of social pathology. Vop. psichol
no. 3:181-183 My-Je'63. (MIRA 17:2,

PARYGIN, B.D. (Leningrad)

On the subject of social psychology. Vop. psichol. 8 no.5:107-112
S-0 '62. (MIRA 16:5)
(Social psychology)

GOYKHENBERG, B.; PARYGIN, D.

Calculation of the optimum number of grinding and polishing machines
for the production of pearl barley. Muk.-elev.prom. 28 no.3:14-15
Mr '62. (MIRA 15:4)

1. Mirgorodskaya mashinocispytatel'naya stantsiya.
(Barley) (Grain milling machinery)

AUTHOR: Parygin, V.V.

TYPE OF CARD

TITLE: A Study of the Effect of the Phases of Admission and the Length of the Feed Pipe in the Pumpless Pressure Feed of a Four-Cycle Engine (Issledovaniye vliyaniya faz vpuska i dliny truboprovoda na tehnichesnyy radij s pamyatnym uoge dvigatelya)

PERIODICAL: Energeticheskij Byulleten', 1959, No. 7, pp. 4-9 (USSR)

ABSTRACT: Tests of the pumpless pressure feed of a four-cycle engine were made with a varying range of phase angles of the beginning and end of fuel admission and with various lengths of feed pipe. The results were drawn in the graph form (Figures 1-3) to show the relation of the total angle of beginning and end of admission and various lengths of pipe to the effective power of the engine. The results disprove the assumption that pumpless pressure feed is conditioned by a strong vacuum formed in the cylinder at the beginning of compression and the start of admission should therefore be retarded. The greater pressure feed is obtained when the start and end phases of admission are near to normal with perhaps a slight turn in favor of preadmission gained by advancing the admission sec. For any given engine, the length of the feed pipe should be equal to or greater than an op-

Card 1/2

90-58-5-5/7

A Study of the Effect of the Phases of Admission and the Length of the Feed Pipe on the Pumpless Pressure Feed of a Four-Cycle Engine

timum figure, after which pressure feed remains more or less constant. The optimum volume of the pipe must be equal to the full volume of the cylinder multiplied by the surplus air factor which is approximately two. Specific fuel consumption is cut by 10% and the power of the engine can be increased by 20-30% when these adjustments are made. There are 6 graphs and 7 Soviet references.

- Card 2/2 1. Internal combustion engines-Performance 2. Internal combustion engines-Fuel systems-Test results 3. Internal combustion engines-Test results

PARYGIN, M.V.

Investigation of the effect of the inlet phase and length of
the inlet pipe on pumpless supercharging of a four-stroke engine.
Energ.biul. no.6:24-28 Je '58. (MIRA 11:8)
(Superchargers)

PARYGIN, M.V., kand.tekhn.nauk

Possibility of increasing the power of four-cycle engines to
20-30 according to the simplified method of pumpless supercharging.
Trudy G ISI no.25:261-280 '56. (MIRA 11:5)
(Superchargers)

IARYA, N. V.

Investigation of the Effect of magnetic field on Flow of an Exhaust Valve on the Nuclear Reactor of the "Kursk" submarine." Cand. Tech. Sci., Kryvyi Rih Water Transport Institute, Dnipro River Fleet, Kryvyi Rih, Ukraine.

SO: Sam. M. S. Dept. - Survey of Scientific and Technical Dissertations defended at Soviet Higher Educational Institutions.

84622

S/107/60/000/009/001/002

E192/E482

9.2570

AUTHOR: Parygin, V.

TITLE: Molecular Amplifiers and Oscillators

PERIODICAL: Radio, 1960, No.9, pp 16-19

TEXT: The ordinary vacuum tube amplifiers cannot be employed in radio communications for very long distances (for example, interplanetary communications) because of their comparatively large inherent noise. Consequently, attempts have been made in recent years to develop amplifiers free from this defect and, as a result of these investigations, the so-called molecular amplifiers and oscillators have been developed. A device of this type is based on the following principle. It is known that molecules of various substances have a certain internal energy corresponding to their rotation velocity. The internal energy of a molecule can change in steps. If a suitable amount of energy is added to a molecule its energy increases by a discrete amount. On the other hand, if a molecule changes its energy from W_3 to W_2 , where W_2 is lower than W_3 , it emits radiation whose frequency f_{23} is determined from the following formula: $W_3 - W_2 = hf_{23}$. In this formula h is the Planck constant. This effect can be used for the purpose of amplification in such a way that the internal energy of molecules

Card 1/5

8.4622

S/107/60/000/009/001/002
E192/E482**Molecular Amplifiers and Oscillators**

increases the energy of electromagnetic oscillations of suitable frequency. This can be done by artificially producing suitable "active" medium in which there are more molecules at the higher energy level than at the lower one. The simplest known means of producing an active medium is employed in the so-called molecular oscillator (maser) employing a beam of molecules. The block diagram of such an oscillator employing a beam of ammonia molecules is shown in Fig. 3. The ammonia molecules in this device pass along a narrow tube and issue through several apertures. The molecules then enter a sorting structure 2 which is in the form of a multi-pole electrical condenser. During their passage through the condensers the molecules are separated and the molecules having the lower energy level are ejected. On the other hand the molecules with the higher energy levels are directed towards the axis of the device; consequently the necessary active medium is produced and the electromagnetic waves can thus be amplified. In general this is achieved by passing the active molecules through a cavity resonator which is tuned in to the given frequency. This amplifier system has a very high positive feedback and it can easily become an

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E192/E482

Molecular Amplifiers and Oscillators

oscillator. The power produced by the oscillator is extremely small. Another disadvantage of this system is its extremely narrow bandwidth. Consequently, the so-called paramagnetic amplifiers have been developed. Since such a device is based on the molecules in a solid substance it is not possible to eject the low energy molecules by the same means as that employed in the ammonia molecular oscillator. The method of producing the active medium in solids is based on 3 energy levels (see Fig 5). The length of each energy level (as shown in Fig.5) is proportional to the number of molecules at this level. In the normal equilibrium state the lower level 1 contains less molecules than the medium level 2; also the upper level 3 has more molecules than the medium level 2. Such a system can only absorb the incident wave. If a wave of frequencies f_{13} such that $W_3 - W_1 = hf_{13}$ is applied to this system the molecules from the lower level will be forced to the upper level. In this way the number of molecules at levels 1 and 3 can be equalized. Consequently the number of molecules at level 3 can be greater than that at a medium level. In this case the oscillations corresponding to the energy-difference

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E192/E482

Molecular Amplifiers and Oscillators

frequency of levels 3 and 2 can be amplified, since a large number of molecules would change the energy from the upper level to the lower one. The medium is thus active with regard to the frequency $f_{23} = (W_2 - W_3) / h$. The block diagram of a paramagnetic amplifier is shown in Fig. 6. Here a paramagnetic crystal is placed inside a cavity resonator 1 which simultaneously resonates at two frequencies. The higher of these frequencies corresponds to the auxiliary radiation which equalizes the number of molecules at the first and third energy levels. The lower resonator frequency corresponds to the frequency of transition from the lower to the medium level; this is the frequency which is amplified. The resonator is fitted in a special double Dewar vessel and the whole system is placed between the poles of a strong magnet. By changing the magnetic field the operating frequency of the amplifier can be varied over a wide range. The operating bandwidth of the system is primarily determined by the quality factor of the resonator and the gain of the system. The amplifier is regenerative and providing the feedback is sufficiently strong it can become an oscillator. One of the disadvantages of the paramagnetic amplifier

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S/107/60/000/009/001/002
E192/E482

Molecular Amplifiers and Oscillators

is the strong coupling between its input and output consequently this device can be employed in wave guides only when the output is sufficiently isolated by means of a ferrite isolator. There are 6 figures.

X

Card 5/5

BOBRINEV, V.; PARYGIN, V.

Light wave generators and amplifiers. Radio no. 7:24-27 J1 '61.
(MIRA 14:10)
(Masers)

I 42963-65 EEO-2/EWT(d)/EWT(1)/EPF(c)/ECC-4/ECC(t)/SEC(b)-2/SEC-2/Pm-4/PI-4/
Fac-4 IJP(c) GG/WW

ACCESSION NR: AP5010115

UR/0109/65/010/004/0770/0772

AUTHOR: Dianova, V. A.; Mustel', Ye. R.; Parygin, V. N.

TITLE: Modulation of light by means of toroidal resonators with ADP crystals

SOURCE: Radiotekhnika i elektronika, v. 10, no. 4, 1965, 770-772

TOPIC TAGS: nonlinear optics, ADP crystal, light modulation, pulsed modulation, toroidal modulator

ABSTRACT: Modulation of light by ADP crystals is discussed. A modulator of the type shown in Fig. 1 of the Enclosure was used in the study. The ADP crystal was placed in a toroidal resonator with its optical axis in the direction of the electric field. The light was propagated in the same direction. If the light is polarized along one of the main crystal planes, the light behind the resonator is elliptically polarized. In the experiments, light was pulse-modulated (pulse width, 3 usec; repetition rate, 800 cps; pulse power, ~ 400 w) at frequencies of 204 Mc and 700 Mc. In the first case an ADP crystal ($C_{cr} \approx 12 \text{ pf}$) 40 mm in diameter and 12 mm thick was used. The loaded Q of the resonator was ~ 500. The percentage modulation was ~ 18%, which corresponds to a phase shift of ~ 50%. A mirror placed on the output side of the modulator causes the beam to pass twice through the crystal. This doubles the phase shift and increases the percentage modulation to ~ 45%.

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L42963-65

ACCESSION NR: AP5010115

In the second case (700 Mc), the capacitance of the crystal was reduced to 0.5 pf as a result of which the percentage modulation (at a pulsed power of ~ 27 w) was ~ 13%. In both cases the length of crystal was << L_{max} . A further decrease of Ccr to 0.2 pf resulted in modulation with a duty factor equal to two. The percentage modulation was 33% at a 1.2-w modulating signal and 10% at an input power of 100 mw. The percentage modulation was determined by means of an FEU-17A photomultiplier [maximum response at $3900 \pm 300 \text{ \AA}$] and an oscilloscope. Orig. art. has: 3 formulas and 3 figures. [YK]

ASSOCIATION: Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta im. M. V. Lomonosova, Kafedra teorii kolebanii (Physics Department, Moscow State University, Chair of the Theory of Oscillations)

SUBMITTED: 21Dec63

ENCL: 01

SUB CODE:SSOP

NO REF Sov: 000

OTHER: 003

ATD PRESS: 3236

Card 2/3

ACCESSION NR: AR4028226

S/0274/64/000/002/B057/B057

SOURCE: RZh. Radiotekhnika i elektronika i elektrosvyaz', Abs. 2B375

AUTHOR: Parygin, V. N.

TITLE: Broadening of spectral line in frequency multiplication

CITED SOURCE: Vestn. Mosk. un-ta. Fiz., astron., no. 4, 1963, 42-46

TOPIC TAGS: frequency multiplication, spectral line broadening,
multiplier noise, natural line broadening, technical line broadening,
signal to noise ratio

TRANSLATION: The influence of two factors on the broadening of a
spectral line during frequency multiplication is considered: (1)
change in distance between spectral components of the input signal,
due to the nonlinear transformation; (2) internal noise of the am-
plifier. The natural width of the spectral line increases k^2 times

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ACCESSION NR: AR4028226

during multiplication while the technical line width increases k times (k is the multiplier factor). Low internal multiplier noise does not cause broadening of the spectral line, but only deterioration of signal/noise ratio at its output. The phase fluctuations of the multiplier output signal are usually affected principally by the noise of frequency $k p$ (p -- quantity close to the input frequency), and not by the noise of the input circuit. Bibliography, 8 titles. V. L.

DATE ACQ: 30Mar64

SUB CODE: GE

ENCL: 00

Card 2/2

PARYGIN, V.N.

Spectral line broadening due to frequency multiplication.
Vest. Mosk. un. Ser. 3: Fiz., astron. 18 no.4:42-46 Jl-Ag '63.
(MIRA 16:8)
1. Kafedra teorii kolebaniy Moskovskogo universiteta.
(Photoelectric multipliers)
(Spectrum analysis)

L 19058-65 EWT(1)/EWA(h) Peb AFETT/ESD(c)/ESD(dp)

ACCESSION NR: AP4040918

S/0109/64/009/006/1079/1081

13

AUTHOR: Dianova, V. A.; Maneshin, N. K.; Mustel', Ye. R.; Parygin, V. N.

TITLE: Frequency multiplier with a nonlinear capacitance and high-Q circuits

SOURCE: Radiotekhnika i elektronika, v. 9, no. 6, 1964, 1079-1081

TOPIC TAGS: frequency multiplier, nonlinear capacitance frequency multiplier, 120 mc frequency multiplier

ABSTRACT: A new design (see Enclosure 1) of frequency multiplier is reported. The input resonator with an internal helical conductor is tuned to 120 mc; its cold Q-factor is about 600. The output toroidal resonator is tuned to an n-th harmonic of the input signal; its cold Q-factor is about 700-900. The nonlinear element is represented by a p-n diode which acts as a coupling between the two resonators. For maximum output, the distance x is selected between $\lambda_{n,f}/4$ and $\lambda_{n,f}/2$. Outputs of 10 and 5 mw were obtained experimentally with multiplication factors

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ACCESSION NR: AP4040918

18 and 24, respectively; the input power was 250-300 mw. Another multiplier was tested which had a multiplication factor of 2 and was intended as one stage of a multistage converter. It was found that: (1) the single-stage converter with a nonlinear capacitance has a conversion factor higher by 10 db than the multiplier with a nonlinear resistance; (2) the single-stage multiplier has a higher conversion factor than the multistage multiplier. Orig. art. has: 2 figures.

ASSOCIATION: none

SUBMITTED: 09May63

ENCL: 01

SUB CODE: EC

NO RIF SOV: 003

OTHER: 003

Card 2/3

L 19058-65

ACCESSION NR: AP4040918

ENCLOSURE: 01

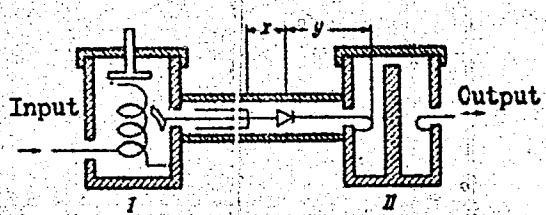


Fig. 1- Single-stage nonlinear-capacitance frequency multiplier

Card 3/3

6475
SOV/141-1-5-6-19/28

AUTHOR: Parygin, V.N.

TITLE: Radiation From the Electron Bunches Over a Diffraction Grid

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1958, Vol 1, Nr 5~6, pp 139 - 145 (USSR)

ABSTRACT: The work investigates the possibility of constructing the electronic frequency multipliers which employ the radiation of a density-modulated electron beam moving in the vicinity of a corrugated metallic surface. The problem is solved under the following assumptions: 1) the metallic surface is ideally conducting; 2) the problem is assumed to be two-dimensional; 3) the surface is only slightly corrugated, i.e. $2h \ll \lambda$, where $2h$ is the depth of the corrugation and λ is the radiated wavelength; 4) the corrugation is described by the sinusoidal law, i.e. $z = h \sin(2\pi y/l)$. Since the system is linear, it is sufficient to consider only one harmonic component of the current. This is given by the first equation on p 140, where I_0 is the amplitude of the harmonic (per unit width of the beam), ω is the frequency of the harmonic.

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the field
the normal and the
magnetic field is described by the equation

RELEASE: 06/15/2000 CIA-RDP86-00513R001239310020-0

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SOV/141-1-5-6-19/28

Radiation from the Electron Bunches Over a Diffraction Grid

If the corrugation is non-sinusoidal and is represented by the first equation on p 143, the change in the field is given by Eq (8). From this it follows that the m-th space harmonic reaches a maximum when $k^2 = (k_0 + mk)^2$. The harmonic forms a wave which "slides" along the surface with the velocity of light. Eq (8) shows also that, provided the depth of the corrugations is small, the surface can be regarded as a superposition of a number of independent sinusoidal surfaces each of these produces its own space harmonic. The above theory was confirmed by some experimental data. The experiments were carried out on a specially constructed tube. This is shown in Figure 2. The electron beam of the tube was velocity-modulated by applying an alternating voltage to the grids 1, 2. The bunching of the electrons took place between the grids 2 and 3. The electron bunches achieved the necessary velocity between the grids 3 and 4; thereafter, they moved over the corrugated surface (Figure 2). The measurements were carried out at wavelengths from

Card4/5

DIANOVA, V.A.; MANESHIN, N.K.; MUSTEL', Ye.R.; PARYGIN, V.N.

Frequency multiplier with nonlinear capacitance and high Q
circuits. Radiotekh. i elektron. 9 no.6:1079-1081 Je '64.
(MIRA 17:7)

MUSTEL', Ye.R.; PARYGIN, V.N.; SOLOMATIN, V.S.

Two-stage parametric frequency dividers. Radiotekhn. i elektron.
8 no.7:1156-1164 J1 '63. (MIRA 16:8)

1. Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta
im. M.V.Lomonosova, kafedra teorii kolebaniy.
(Frequency changers)
(Parametric amplifiers)

PARYGIN, V.N.

Bunching of electrons in the field of a delay system. Radiotekh.
i elektron. 8 no.4 591-599 Ap '63. (MIRA 16:4)

1. Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo
universiteta im. M.V.Lomonosova, kafedra teorii kolebaniy.
(Delay lines) (Traveling-wave tubes) (Microwaves)

MEDNIKOV, O.I.; PARYGIN, V.N.

Grading of ammonia molecules in a maser. Radiotekhnika elektron.
8 no.4:653-658 Ap '63. (MIRA 16:4)

1. Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo
universiteta im. M.V.Lomonosova, kafedra teorii kolebaniy.
(Masers)

L 12961-63

ENT(1)/BDS/EEC(b)-2 AFPTC/ASD/RADC PI-4 GO/IJP(C)
S/109/63/008/004/015/030

(62)

AUTHORS: Mednikov, O. I., and Purygin, V. N.TITLE: On the sorting of ammonia molecules in a molecular generator 25

PERIODICAL: Radiotekhnika i elektronika, v. 8, no. 4, 1963, 653-658

TEXT: The author compares the effectiveness of sorting ammonia molecules in a molecular generator with either a transversal or a longitudinal field. Sorting systems such as a bifilar spiral and a set of diaphragms are investigated both theoretically and experimentally. Maximum power output of the molecular generator was recorded with the use of a bifilar spiral for sorting the molecules. The relationship between the power generated, and the length of the sorting in the diaphragm system was studied. The author comes to the conclusion that a bifilar spiral constitutes an effective system for sorting molecules and makes it possible to obtain a signal strength five times stronger than can be done—with identical parameters—by using a quadrupole capacitor.

ASSOCIATION: Fizicheskiy fakul'tet Moskovskogo universiteta im. M. V. Lomonosova
Kafedra teorii kolebanij (Physics Department, Moscow State University
imeni M. V. Lomonosov, Chair of Oscillation Theory.)

SUBMITTED: April 7, 1962

Card 1/1

L 12963-63BDS/ENT(1)/EEC(b)-2/ES(w)-2 AFFTC/ASD/SSD Pab-4 IJP(C)
S/109/63/008/004/007/03061
60AUTHOR: Parygin, V. N.

TITLE: Grouping electrons in a field of a delaying system.

PERIODICAL: Radiotekhnika i elektronika, v. 8, no. 4, 1963, 591-599

TEXT: The article investigates the formation of electric current harmonics in an electron stream reacting with a field of a delaying system. Amplitudes of the first ten harmonics of the current are determined under conditions of varying velocities of electrons and the wave. Performance of harmonics in a traveling-wave tube is researched at different levels of the input signal. The article stresses the growing importance of electronic frequency multipliers which, it explains, are devices where frequency conversion takes place by utilizing non-linear processes within the electron stream and which make possible the obtaining of a high power output with a considerable frequency multiplication factor. The article describes the use of a multiplier with a delaying system to affect the grouping of electrons, and cites a spiral as one type of delaying system for which it claims great efficiency. The author concludes that: 1) Electron streams, reacting with a delaying system, can be grouped and enriched by a system of high harmonics in conjunction with frequency multipliers; 2) The maximum amplitude of the harmonics exceeds that

Card 1/2

L 12963-63

S/109/63/008/004/007/030

Grouping electrons in

which can be reached with a klystron grouping. He notes, however, that his calculation is carried out without taking into account the Coulon interaction of electrons, and is therefore valid only for low-density electron streams. The influence of repelling forces on the amplitude of the harmonics will—he says—have to be studied separately. 3) The amplitude of the harmonics depends only to a small degree on the initial speed of the electrons. While, the power output achieved in a delaying system, at saturation, may vary by a factor of 16, the maximum of the harmonic current changes only from 10 to 20%. 4) Amplitudes of all harmonics oscillate along the delaying system. The size of the oscillation period is the shorter, the greater the sequence number of the harmonic. The amplitude of the first maximum—for all harmonics—exceeds the amplitudes which can be reached in subsequent maxima. 5) Changes in input power alter the position of the optimum grouping point within the delaying system. 6) Given a certain value of A_0 , there is a sharp increase in harmonics. This improvement in the grouping of electrons is especially noticeable in the higher-numbered harmonics when $b = 1.5$

ASSOCIATION: Fizicheskiy fakul'tet Mskovskogo gosudarstvennogo universiteta im. M. V. Lomonosova Kafedra teorii kolebaniy (Physics Department of Moscow State University; Chair for Oscillation Theory.)

SUBMITTED: April 19, 1962

Card 2/2

APPROVED FOR RELEASE: 06/15/2000

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J-11274-63 BDS

S/109/63/008/007/1156/1164

ACCESSION NR: AP3007716

46

AUTHOR: Mustai', Ye. R.; Par'ygin, V. N.; Solomatkin, V. S.

TITLE: Two-circuit parametric frequency dividers

SOURCE: Radiotekhnika i elektronika, v. 8, no. 7, 1963, 1156-1164

TOPIC TAGS: parametric frequency divider, series-connected divider, parallel-connected divider, pumping frequency generator, frequency division band, oscillation amplitude, pumping current, diode bias

ABSTRACT: A two-circuit parametric frequency divider with a series- or parallel-connected pumping frequency generator is studied. The study includes a theoretical summary of the operation of the device and an analysis and comparison of the operations of both types of circuits for the case when division factor $n = 4$. A parametric frequency divider with a D7 diode and a pumping frequency of 8-10 Mc was investigated. For the circuit with the series-connected pumping frequency generator, small relative frequency division bands were achieved. At $n = 4$ the relative band, $\Delta f/f = 1\%$. With an increase in the division factor, the band decreased, and at $n = 8$ division no longer took place. In the case of the parallel-connected pumping frequency generator

Card 1/2

DIANOVA, V.A.; MANESHIN, N.K.; MUSTEI', Ye.R.; PARYGIN, V.N.

Microwave frequency multiplier with a high multiplication factor.
Radiotekh. i elektron. 7 no.2:348-349 1962. (MIRA 15:1)

1. Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta
im. M.V.Lomonosova.
(Microwaves) (Frequency multipliers)

PARYGIN, V. N.; SHIKHINSKAYA, R.E.

Emission of electron bundles by a goffered wave guide. Nauch.dokl.
vys.shkoly; radiotekh. i elektron. no.2:66-73 ' 58.(MIRA 12:1)

1. Kafedra teorii kolebaniy fizicheskogo fakul'teta Moskovskogo gosu-
darstvennogo universiteta.
(Microwaves) (Wave guides) (Electrons)

PARYGIN, V.N.

1957

Making the theory of mutual synchronization of two oscillators more
exact. Vest.Mosk.un.Ser.mat.,mekh., astron.,fiz., khim. 12 no.2:139-144
'57. (MIRA 10:12)

1.Kafedra kolebaniy Moskovskogo universiteta.
(Oscillators, Electron-tube)

100 100 100

Category : USSR/Radiophysics - General Problems

I-1

Abs Jour : Ref Zhur - Fizika, No 1, 1971, No 1790

Author : Parygin, V.N.

Title : Mutual Synchronization of Three Loosely Coupled Self-Oscillating Generators

Orig Pub : Radiotekhn. i elektronika, 1956, 1, No 2, 197-204

Abstract : The method of slowly varying amplitudes is used to analyze the mutual synchronization of three loosely-coupled oscillators, connected to a line. The behavior of this system in the mutual-synchronization region is examined for two cases: when the oscillators differ substantially in power, and when the oscillators are of nearly equal rating. The forms of the stable regions of mutual synchronization are investigated. It is indicated that the amplitudes and phases of the oscillator output may change abruptly when the parameters change within the mutual-synchronization region. The calculated relationships are checked experimentally.

Card : 1/1

PARTGIN, V.N.

Mutual synchronization of self-excited oscillators in a weak coupling arrangement. Radiotekhnika i elektron. 1 no.2:197-204 F '56. (Oscillators, Electron-tube) (MLRA 9:7)

S/109/62/007/062/020/024
D256/D303

9,4 000

AUTHOR: Dianova, V A., Maneshin, N K., Mustel, Ye R., and
Parvin, V.N.

TITLE: UHF-multiplier with a high multiplication factor

PERIODICAL: Radiotekhnika i elektronika, v. 7, no. 2, 1961.
348 - 349

TEXT: Preliminary results are reported on investigating a frequent multiplier with a p-n diode used as a non-linear capacity. The destruction of the multiplier was essentially identical to that described previously by V.B. Braginskij, et al. (Ref. 4: Radiotekhnika i elektronika, v. 6, no. 7, 1961, 1173), but the output frequency was increased to 24,000 Mcs/sec. The dependence of the output power upon the number of the harmonic is presented in the form of a graph showing that between the 32nd and 85th harmonics the power decreases smoothly by 14 db. The maximum signal observed was 70 db above the noise level. The time constant of the diode measured at -10 V was 1.14×10^{-13} sec. At 660 Mcs/sec input frequency the multiplier

Card 1/2

L 361/6-66 ENT(6)
ACC NR: AP6014255

SOURCE CODE: UR/0109/66/011/005/0947/0949

AUTHOR: Dianova, V. A.; Mustel', Ye. R.; Parygin, V. N.

29
B

ORG: Physics Department, Oscillation Physics Section, Moscow State University im. M. V. Lomonosov (Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta. Kafedra fiziki kotelbanii)

TITLE: Light modulation by 3.2 cm wave

SOURCE: Radiotekhnika i elektronika, v. 11, no. 5, 1966, 947-949

TOPIC TAGS: modulated light, optic modulator

ABSTRACT: An experimental investigation of light modulation was made at a frequency of 9260 Mc using the linear electro-optic effect in a single ADP crystal. A cylindrical resonator, in which E_{010} -type oscillations were excited, was used to produce the required longitudinal electric field. To reduce losses due to ubf and to increase the modulation efficiency, the resonator was partially filled with an electro-optical medium. A crystal, 3 mm in diameter and 10 mm long, was used for this resonator. Light modulation was accomplished in a pulsed regime with a large duty factor. With a 145-w modulating power a phase shift of 0.46 was obtained, which in turn corresponded to a modulation depth of 44%; with a modulating power of 9 w the modulation depth was 12%. The quality of the modulator for such a system was $1.4 \cdot 10^{-3} \text{ rad}^2/\text{w}$.

Card 1/2

UDC: 535.241.13

L 26148-66

ACC NR: AP6014255

A modulator consisting of two identical resonators with ADP crystals was also investigated. Both resonators were excited by the same generator. An increase of 1.75 in the phase shift at crystal output was obtained for the case of an optimum phase. A shift in the uhf field phase by π from the optimum phase at wavelength $\lambda = 3.2$ cm reduced the modulation depth to zero. This confirmed the fact that light modulation actually occurred at $\lambda = 3.2$ cm. Orig. art. has: 3 figures. [JR]

SUB CODE: 09 / SUBM DATE: 11Jun65 / ORIG REF: 001 / OTH REF: .004 / ATD PRESS: 425^f

Cord 2/2 *Jo*

ACC NR: AP6023873

SOURCE CODE: UR/0109/66/011/007/1275/1284

AUTHOR: Parygin, V. N.; Maneshin, N. K.

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Frequency multiplication by a diffusion capacitance

SOURCE: Radiotekhnika i elektronika, v. 11, no. 7, 1966, 1275-1284

TOPIC TAGS: frequency multiplication, semiconductor diode, diode capacitor

ABSTRACT: The W. Shockley formula for the diffusion capacitance of a semiconductor diode was developed for the case of a small harmonic signal when the a-c voltage amplitude is much lower than $kT/q \approx 0.025$ v. As much higher amplitudes are used in frequency multipliers, the present article deduces an integral formula for the diffusion current corresponding to a strong a-c signal and, from this formula, calculates the efficiency of frequency multiplication by the diffusion capacitance. It is assumed that: (a) the resistance of the semiconductor body is much lower than that of the p-n junction and (b) the contribution of the barrier capacitance to the frequency

Card 1/2

UDC: 621.374.4:621.382.2

ACC NR: AP6023873

conversion is small. The diffusion-capacitor Q-factor vs. frequency is evaluated assuming that the impurities in the diode base are distributed according to a power law. An experimental verification included the determination of: (a) frequency-conversion efficiency vs. harmonic no. and (b) saturating input power vs. harmonic no. These results were obtained:

Harmonic no.	2	3	4	5	6
With 400-mv input,					
the output mw is	240	175	130	75	56
Multiplication efficiency, %	60	44	32	18	13
Saturating input, mw	over 1000	700	400	350	330

The table illustrates the feasibility of one-stage high-ratio frequency multipliers. "In conclusion, the authors wish to thank K. S. Rzhevkin for his valuable advice and comments." Orig. art. has: 4 figures, 46 formulas, and 2 tables.

SUB CODE: 09 / SUBM DATE: 10Feb65 / ORIG REF: 006 / OTI REF: 009

Card 2/2

25(1)

PHASE I BOOK EXPLOITATION

SOV/1753

Parygina, Natal'ya Diomidovna

Novotul'skiy metallurgicheskiy...; iz istorii zavoda (Novotul'skiy Metallurgical Plant; a History of the Plant) /Tula/ Tul'skoye knizhnoye izd-vo, 1957. 53 p. 4,000 copies printed.

Ed.: S.M. Yudkevich; Tech. Ed.: L.I. Pulin.

PURPOSE: The purpose of this booklet is to acquaint the general reader with the history and development of the Novotul'skiy Metallurgical Plant.

COVERAGE: The author describes the developments at the Novotul'skiy plant starting in 1931 when the Council of People's Commissars of the USSR decided to build a plant at Osinovaya Gora near the town of Tula. One furnace was built first, and later another furnace went into operation. When in 1941 the Fascist armies converged on Tula, the plant was evacuated and the furnaces plugged. Postwar

Card 1/3

PARYGINA, Natal'ya Diomidovna; YUDKEVICH, S.M., red.; PULIN, L.I., tekhn.
red.

[Novo-Tul'ski metallurgical...; a history of the plant] Novotul'skii
metallurgicheskii...; iz istorii zavoda. [Tula] Tul'skoe knizhnoe
izd-vo, 1957. 53 p. (MIRA 11:4)
(Novo-Tul'skiy--Metallurgical plants)

Distr: h2c(j) 7

✓ Complex compounds of sulfur dioxide with hydrogen chloride, hydrogen bromide, and hydrogen iodide. Stanislaw Wlachowicz, Tadeusz Parcianek, and Tadeusz Witko (Politech. Lodz, Poland). Zeszyt Nauk. Politek. Lodz. Nr. 22, C.A.W., No. 7, 17-34 (1955) (English summary).—Aq. solns. contg. SO₂ and HCl, HBr, or HI were investigated. Specific cond. at 0 and 25°, and pH at 25°, were detd. for solns. prepnd. by dilution; 0-50 ml. of 0.17-0.83M solns.; light absorption was measured at 272 m μ and various concns., and within 200-480 m μ ; for acid:SO₂, 1:1 molar ratio. The existence of complexes SO₂.HCl, SO₂.HBr, and SO₂.HI, was confirmed (C.A. 52, 850d). Absorption max. were at 272, 282, and 400 m μ , resp.

J. Steele

7
2 May
1

WITEKOWA, Stanislawa; WITEK, Tadeusz; PARYJCZAK, Tadeusz

Coagulating effect of ultrasonic vibration. I. The effect
of ultrasonics upon the coagulation of hemicellulose in waste
after cellulose alkali. Przem chem 41 no.4:195-197 Ap '62.

1. Zaklad Chemii Ogolnej, Politechnika, Lodz.

Parylis, E. Ya.

Purification of reagent-grade sulfuric acid from nitrogen oxides. E. Ya. Parylis and M. S. Shevchuk (State Chem. Plant, Krasnoyarsk). *Khim. Prom.* 1954, 244.—Hydrazine sulfate was found to be a suitable reducing agent for the purification of H_2SO_4 and is used in proportion of 4 g. of the solid salt per ton of acid. The reaction is usually complete in 2 hrs. W. M. Sternberg

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Purification of reagent sulfuric acid from nitrogen oxides.
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1. Krasnoural'skiy gosudarstvennyy khimicheskiy zavod.
(Sulfuric acid industry)

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CIA-RDP86-00513R001239310020-0

GABRIYEOVA, M.G.; SEMENOV, A.N.; PARYLIS, S. Ya.; NIKITASH, V.G.

Separation of fluorine in the production of dinitro superphosphate.
Khim. prom. 41 no. 12:924-925 D '65 (MAY 1961)

APPROVED FOR RELEASE: 06/15/2000

CIA-RDP86-00513R001239310020-0"

APAKHOV, I.A.; KALYAZINA, V.S.; PARYLIS, E.Ya.; KLYUKINA, E.P.; POSTNIKOV, A.V.; Prinimali uchastsiye: BASHKIROVA, Ye.M.; NAZAROVA, A.K.; KOSTOUSOVA, A.S.

Improving the quality of contact sulfuric acid. Khim. prom.
41 no.10:745-746 O '65. (MIRA 18:11)

KOGON, M.G.; SVIDLER, K.N.; PAVYLIS, M.E.

Control recorder of the length of the rubberized fabric strip.
Kauch. i rez. 23 no.2:49-51 F '64. (MIRA 17-1)

1. Promenergoavtomatika, g.Sverdlovsk.

L 39486-66 EWT(d)/EEC(k)-2 GD/CS
ACC NR: AT6002987

SOURCE CODE: UR/0000/65/000/000/0196/0200

AUTHOR: Kogon, M. G.; Parylis, M. E.; Svidler, K. N.

ORG: none

TITLE: Magnetic-element digital measuring instruments |⁰

SOURCE: Vsesoyuznoye soveshchaniye po magnitnym elementam avtomatiki i vychislitel'noy tekhniki. 9th, Yerevan, 1963. Magnitnye tsifrovyye elementy (Magnetic digital elements); doklady soveshchaniya. Moscow, Izd-vo Nauka, 1965, 196-200

TOPIC TAGS: digital measuring instrument, magnetic element, industrial automatic control

ABSTRACT: Two applications of ferrite-diode logical systems to industrial automatic controls are described. A control counter intended for regulating the process of vulcanization of rubberized fabric consists of a fabric-strap-travel sensor, a photo transducer, a signal shaper, a switch, a travel counter, a programming unit, amplifiers, etc. This data of an experimental hookup is reported: maximum travel,

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ACC NR. AT6002987

12 m; error of travel measurement, ± 5 cm; maximum total length, 1000 m; error of total-length measurement, ± 10 cm; maximum frequency of counting pulses, 200 cps; the overall error is claimed to be 0.005%. A digital gauge for measuring diameters intended for heavy-machine building application operates on the roller principle and consists of a roller, a transducer, a computing device, a pulse generator, a storage-and-correction unit, and an rpm sensor. "Laboratory tests" of the gauge are mentioned. "Besides the authors, Yu. M. Pavlov, V. A. Bragin, M. V. Busygina, I. V. Zhukova, and D. A. Korol'kov took part in the work." Orig. art. has: 5 figures and 1 formula.

SUB CODE: 09 / SUBM DATE: 23Apr65

Card 2/2 MLP

L 44287-65 ENT(d)/ENP(v)/T/ENP(k)/ENP(h)/EED-2/ENP(1) Po-4/Ff-4/Pg-4/Pk-4 TJK(c)
BB/GG/GS

ACCESSION NR: AT5011614

UR/0000/64/000/000/0414/0420

AUTHOR: Kogon, M. G., Parylis, M. E., Svidler, K. N.

TITLE: Magnetic elements in digital computers used for the control of continuous transportation systems with automatic load directing

SOURCE: Vsesoyuznoye soveshchaniye po magnitnym elementam avtomatiki, telemekhaniki, izmeritel'noy i vychislitel'noy tekhniki, Lvov, 1962. Magnitnye elementy avtomatiki, telemekhaniki, izmeritel'noy i vychislitel'noy tekhniki (Magnetic elements of automatic control, remote control, measurement and control engineering); trudy soveshchaniya, Kiev, Naukova dumka, 1964, 414-420

TOPIC TAGS: automatic control system, digital computer, automatic transportation system, automated sheet sorting, automated log classification, magnetic element, control computer

ABSTRACT: From the very beginning of the work on the automation of continuous transportation systems with automatic addressing of loads, the construction bureau "Promenergoavtomatika" avoided the use of relays and concentrated rather on the use of reliable magnetic elements. At the same time, the goal extended far beyond the simple substitution of relays and the related investigations resulted in new automation principles based on the

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L 44287-65

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use of the principles of computer technology. The paper describes two new digital computers (using ferrite-diode elements) for: 1) the control of the unit for the sorting of sheets, and 2) the semiautomatic lines for the classification and sorting of logs. Special emphasis was placed on the reliability of operation because the control computers are earmarked for industrial use. Orig. art. has: 3 formulas and 5 figures.

ASSOCIATION: None

SUBMITTED: 29Sep64

ENCL: 00

SUB CODE: DP, IE

NO REF SOV: 002

OTHER: 000

B4
Card

2/2

PARYS, Janina

10) Determination of acidity of some food products. Edmund Przybylski and Janina Parys. Roczniki Państwowej Zakłady Nauk. 6, 110-113 (1958) (English summary).—A potentiometric titration with NaOH has been used to det. the total acidity and mineral acids in vinegar, wine, beer, flour, and coffee substitutes. Small amounts of mineral acids were titrated after adding a known quantity of the acid to the sample. Michael Falk

(1)

Revised and relettered the findings of see for TV and
written by Mr. [redacted]. Reviewed by [redacted].
[redacted] pages. [redacted] highlighted. 478 - 163.